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ABSTRACT

The report, covering 1965-68, deals first with a program entitled Improved Preparation for Culturally-Deprived Rural Children, which was designed to improve reading skills of elementary school students. Background of the Western States Small Schools Project for New Mexico is described, as well as how Carrizozo Public Schools were selected for the program. Roles of public school personnel, State Department of Education staff, and the Ford Foundation are then presented. Criteria for selection of a teacher to participate in the program are given, and the progress of the first 2 years is discussed. Plans for the third year complete the first part of the report and become the outline for the Carrizozo Reading In-Service Program, the goal of which was to make every teacher in the Carrizozo district (from primary through high school) aware of, and practice, skills of diagnostic teaching to improve students' reading comprehension. Consultants were provided by the Reading Research Center at New Mexico State University. Objective program evaluation by pre- and post-program tape recordings revealed, for example, that teachers were able to elicit higher level responses through use of higher level questioning behavior at the end of the program. (Appendices are not included due to marginal legibility.) (BD)

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WESTERN STATES SMALL SCHOOLS PROJECT
FOR NEW MEXICO

REPORT OF THE

EXTENSIVE READING PROGRAM

1965-1968

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RC003232

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State Department of Education
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IMPROVED PREPARATION FOR CULTURALLY-DEPRIVED RURAL CHILDREN 1965-1968

Carrizozo, New Mexico, was chosen for this particular project for two specific reasons. First, the administration and staff showed that they had the characteristics of a group who would be willing to follow directions, report research, and welcome visitors. Second, the problems of the children had been identified, and the staff was in search of assistance.

A preliminary meeting was held at the Carrizozo School on September 7, 1965, to discuss "Remedial Reading for the Culturally Deprived." Present at the meeting were:

Carrizozo Public Schools

Mr. Glen Ellison, Superintendent
Mr. Jake Hawkins, Guidance Counselor
Mrs. Jake Hawkins, Reading Specialist
Mr. John McCollaum, Principal
Mr. John Hightower, School Board Member
Mr. R. M. Shafer, School Board Member
Mr. C. R. Wells, School Board Member

State Department of Education

Dr. Mildred Fitzpatrick, Director of Elementary Education
Mr. Paul Simpson, Language Arts Specialist
Dr. Robert Swanson, Director of Guidance
Dr. Henry Hammer, Assistant Director of Guidance
Mrs. Ellen Hartnett Digneo, WSSSP Director

At the beginning of the meeting, Mrs. Digneo explained that the following would be expected of the Carrizozo Public Schools, since they would be a part of the New Mexico Small Schools Project:

1. Progress reports
2. Candid camera pictures
3. Report of visitors
4. Willingness of part to have visitors
   Superintendent
   Principal
   Teacher
5. Willingness of administrator to release teacher to explain to visitors
6. Screening for difficulties
   Vision
   Hearing
   Coordination
7. Willingness of teacher to experiment and try new methods
8. Willingness to explain program to parents
9. Local supervision
   Superintendent
   Principal
10. Tape speech problems

Mrs. Digneo explained further that the school would receive from The Ford Foundation Project the following:

1. Consultant services
   State Department of Education
2. Occasional assistance of special consultants
3. Workshop experience
4. Not too many promises (would rather give something we have not promised than to promise something we cannot give)

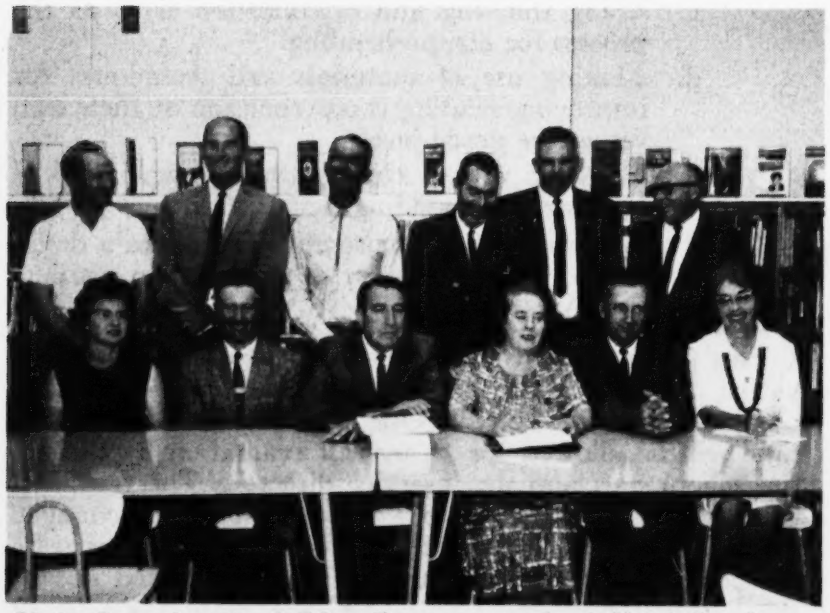
Each of the State Department of Education Specialists spoke, in turn, telling how they planned to assist in the program. Dr. Mildred Fitzpatrick acknowledged at least two visitations during the first school year: one each semester. Mr. Paul Simpson visited an average of once every two weeks, as he was the chief consultant to this project. Dr. Robert Swanson and Dr. Henry Hammer were both on call and made periodic visits of about one visit every six weeks. Dr. Swanson stated that if a particular type of testing was needed which could be used in other small schools, he would be willing to purchase these tests and have them available for Carrizozo and other schools in the project. Mrs. Digneo made periodic visits with the specialists who worked with the program.

Superintendent Ellison reported that his teachers had given a vote of 100 per cent to the program, and there was a deep interest on the part of the community and the local school board. All three school board members expressed approval of the program and a willingness to cooperate with the Small School Project.

Following the assumption that there is a direct correlation in reading ability and performance in the subject matter areas and that there is also a direct correlation between reading ability and the dropout rate of these children, serious effort was put into the reading program.

Selecting the right teacher for the project was very important. The following criteria was set up:

1. A qualified language arts teacher (elementary level).
2. A teacher who not only accepted the slow student but had a real feeling for them.
3. A teacher who was not afraid to leave the well-beaten paths of standard procedure and one who will try varied methods of individual instruction.
4. A teacher who believes in a remedial program and can convince others. Nothing does more for the success of a program than a person who is willing to define and defend a program with zeal and know-how.
5. A teacher with special training. These students were the by-products of group teaching and standard teaching materials. Experience with students and teaching is not enough. This teacher must know basic remedial techniques. It may be stated that sympathy will not take the place of empathy, and know-how is what these students need. Every past teacher has felt sorry for these students. It is strongly recommended that a teacher who takes such classes has taken courses of remedial methods and techniques in the area of language arts.



State Department of Education personnel, staff of Carrizozo Schools, and school board members look at the big picture of working to improve Language Arts Program.

State Department personnel assisted in setting up the guidelines and suggested procedures for the reading specialist.

With the opening of school, the reading specialist visited grades 3 through 8. She observed classes and selected the students who definitely showed signs of needing assistance.

Early in the fall, a workshop was planned with State Department consultants and other professionals on hand to assist. Substitute teachers were hired so that all teachers could be in attendance at the workshop. Design of operation was discussed, and the staff was brought into a stimulating discussion concerning equipment, materials, and facilities.

With only one special reading teacher available, the special assistance had to be somewhat limited. This was an opportunity program for those students who wanted and needed help.

The records showed that as the student grew older and experienced more difficult subject matter, his achievement decreased. When the student experienced a deficiency in reading and comprehensive skills, interest and participation dropped severely.

It was decided that a program, which would include grades 3 through 8 would be the best levels for the first year of the project. Grades 1 and 2 would be researched and tested to ward off reading problems.

Goals of success would include improvement of attitudes, along with a desire to participate and to become accessive. In no case was the student branded as backward or a slow learner. Finding a point of interest for each individual was an important goal.

The classroom teachers and administrators decided that the classroom teacher should make the referral for the first year. The reading teacher would then get acquainted with the student, test for basic sight vocabulary, discover word attack methods used, determine the reading level, and decide where to start. The school counselor was often called in to assist with additional testing of individuals.

The physical condition of the child was checked by the school nurse and other medical and psychological referral agencies.

Early in the program, it was decided that the class size would be kept around one to seven. Retarded students were not included in these special reading classes. Since the remedial program needed to be permissive, chronic discipline cases were also excluded.

Extensive evaluation on an individual basis gave en-

couragement to those who were eager to improve their reading skills.

Materials were chosen to meet the student needs. Books with high interest and low vocabulary proved to be very useful.

The teacher's main task throughout the project was to motivate the learner and improve his attitude toward reading. Negative frustrations were often dispelled with an experience of success.

When the learner was given an understanding of his reading problem, he was also interested in assisting in finding a solution. As the SRA Power Builders and Rate Builders were individualized, each pupil was permitted to grade his own work. Once a week, the teacher had a conference and helped the pupil evaluate his own progress. The best results came by having daily meetings in small groups.

The SRA and other word games were very helpful in assisting the student to improve his performance in reading rate and in comprehension as well as in vocabulary word attack skills, and listening skills. The Reading Laboratory series provided a developmental sequence of basic reading instruction for grades 1 through 12.

Each student took an interest in practicing the skills until he had achieved proficiency. In the student's own record book, he kept his progress chart. The record of progress enabled him to analyze what he had done and to plan other learning activities. The teacher also used the evaluative devices as a basis for special counseling, guidance, and tutoring. The records also furnished an excellent basis for conferences with parents. Through the use of practice materials, the child developed the ability to comprehend, interpret, think critically, and make value judgments.

During the first and second year of the program, the staff decided to:

1. Support the school's curriculum by testing and evaluating individual as well as overall programs.
2. Search for strengths and weaknesses.
3. Establish local norms, thereby aiding evaluation of the curriculum.
4. Enter into testing, analyzing, suggesting for the installation of the remedial program.

At the close of the second year, the staff decided that the students were entering in and participating much better than they were at the beginning of the program. They utilized their time much better and had an improved self image. Tests showed a decided improvement in the skills related to the language arts.

The third and final year of this project was planned around a reading inservice consultancy which was furnished by New Mexico State University's Reading and Research Center. It was in the final year that the Carrizozo staff and the Western States Small Schools Project Director decided that the greatest service to the program would be in the form of a consultancy service. On site consultant days and other cooperative project conferences were planned to meet the objectives.

The program planned for the year included:

The Proposal

It is proposed that the Reading Research Center personnel at New Mexico State University work with the teaching and administrative personnel of the Carrizozo School District in an attempt to meet one of the instructional needs of the teachers of that district.

Goal

To develop an inservice program which will make every teacher in the Carrizozo district aware of and practice skills of diagnostic teaching.

Specific Objectives

1. To provide teachers with better understanding and skills in:
   a. Using student's experiences as the basic materials for reading comprehension.
   b. Utilizing language as the key for communication and comprehension.
   c. Using thinking and organization skills as the process for comprehending.
   d. Making use of materials and techniques for improving reading comprehension at their own respective grade levels.
   e. Working with a child at his present level of language and reading development.
2. To evaluate this year's program and make a definite plan for ongoing inservice programs in reading.

Evaluation

This program will be characterized by continuous evaluation planned and executed by both the teachers and the reading center personnel. One day of the total project time will be allowed for an overall evaluation by the entire school staff and the inservice director. The results of the project shall also be evaluated in terms of changed teacher behavior and fulfillment of the stated program objectives. This latter evaluation shall be carried out by the Reading Research Center and the State Department of Education under the direction of Dr. M. D. Redemer, Director of Research.

CARRIZOZO READING IN-SERVICE
1967-1968

By

Dr. Leonard Breen
Reading Research Center
New Mexico State University

For the past several years a trend toward increased emphasis on in-service education has become apparent in this country. This trend is the result of several factors of which the major ones are: 1) a growing realization on the part of teachers and administrators that their pre-service education has not adequately trained them to cope with all of the many situations they face daily; 2) a growing body of knowledge coming from increased educational research and experimentation; and 3) increased federal funds providing materials, study opportunities and greater utilization of educational leaders at all levels.

Such in-service activities have been, for the most part, directed toward schools in the larger urban districts where the teaching would reach greater numbers of teachers and where supporting funds have been made available. New Mexico, however, finds itself in the unique position of having only three such urban centers with the remainder of the state being made up of many small school systems. Because of the vast openness of the state and the relatively small population therein, these rural school systems will remain a part of the New Mexican education scene for some time to come. If we are truly concerned about quality education for all the children throughout the state, the rural school is the area which has fertile ground for creative in-service and innovative research programs. Recognizing this, representatives of the Carrizozo Public Schools, the Western States Small Schools Project, and the New Mexico State University Reading Research Center met early in September, 1967, to plan a joint one-year in-service program at the elementary and secondary levels. The following report is a discussion and evaluation of that program.

DESCRIPTION OF THE PROGRAM

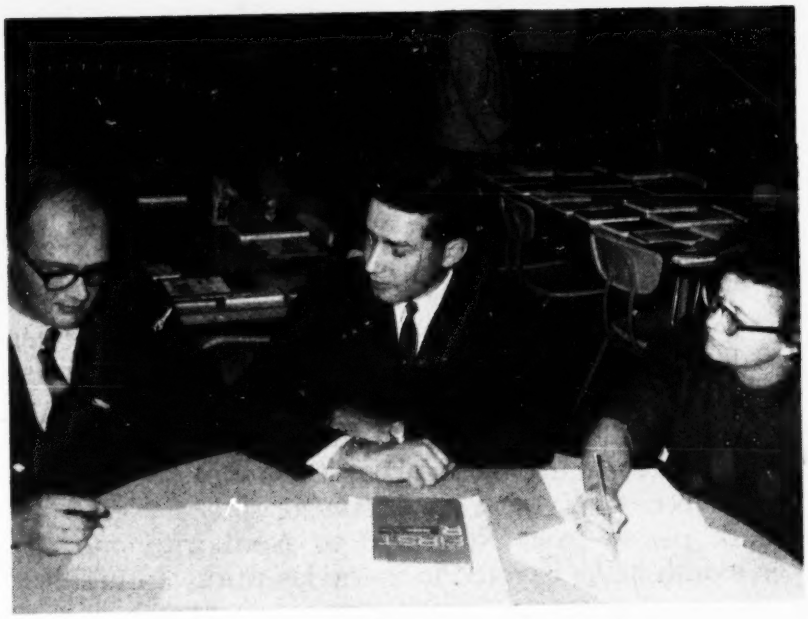
The purposes of the meeting held early in September were to discuss the reading-language needs of the children attending the Carrizozo Public Schools and to explore the possibilities of providing in-service help to the teachers of the district that they might teach toward these needs more effectively. It was decided by this body of representatives that the greatest reading need of the Carrizozo student population was that of obtaining and understanding the meaning of their reading materials. With this need identified it then became possible to plan an in-service program focusing upon the problem of reading comprehension.

Operational Plan:

It was agreed by the above representatives that the New Mexico State University Reading Research Center would provide a project to include six days of in-service work with the Carrizozo Public Schools. In order to incorporate these six days into the Carrizozo school calendar and to secure the best possible use of the Reading Center personnel, these six days were spread over a six-month period from November to April with one day per month being devoted to in-service work. In fulfilling

The operation plan was set.

this agreement two of the six days were spent in observation of pupils and classrooms and in general sessions with the entire Carrizozo teaching staff. The remaining four days were devoted to work at specific grade levels. Half of each in-service day with teachers at specific grade levels was spent in demonstration lessons conducted by personnel from the Reading Research Center. The remaining half-day was used to involve the teachers in examining materials, developing lessons and/or materials, and discussing techniques and principles of teaching related to the problem of increasing children's comprehension of reading.



Program objectives were discussed.

Program Objectives

Every successful instructional program, whether it be displayed in a teacher's classroom or in a large district's total curriculum, is characterized by a well defined, clearly stated set of goals or objectives. An in-service program of teacher education is no exception. The major goal of this in-service project was to help the teachers of Carrizozo improve the reading comprehension of the children in their classrooms. Specifically this project was designed to provide the teachers with better understanding and skills in:

a) Using student's experiences as the basic materials for reading comprehension.
b) Utilizing language as the key for communication and comprehension.
c) Using thinking and organization skills as the process for comprehending.
d) Making use of materials and techniques for improving reading comprehension at their own respective grade levels.
e) Working with a child at his present level of language and reading development.

The following behavioral objectives were also seen as being major goals in this endeavor:

a) All teachers will display a greater emphasis in illiciting higher level responses from children through the use of higher level questioning behavior.
b) All teachers will display a lessened tendency to accept student responses which are incongruent to the teachers questions.
c) All teachers will ask a greater number of open-ended, multiple answer questions rather than single answer "one-shot" questions.
d) All teachers will demonstrate an increased ability to relate their questions to one another and challenge deeper thinking in the students.
e) All teachers will be able to identify and utilize Gallagher's model for asking questions and illiciting student responses at different cognitive levels.

A perusal of the objectives reveals that this project was planned to attack the problem of reading comprehension from three fronts. First, the role of language development, language experiences and language deprivation in reading comprehension was to be examined. This phase was especially important at the primary levels. Second, the concept of teaching reading as a thinking process was seen to be tremendously important. Special effort was made to emphasize this concept with the upper elementary and secondary teachers. Third, an examination was made of the types of questions teachers ask in the classroom and the importance of these questions for helping students structure their thinking and oral responses. All participating teachers, grades 1 through 12, were shown how a greater understanding and use of intelligent classroom questions could lead to increased student comprehension and discussion of materials read. Because of the great scope in terms of grade levels and types of materials presented, it may lend clarity to the report to discuss the specific activities of this project in exploring these three fronts as they were developed on each of the six in-service days.

PROGRAM ACTIVITIES

November 30

The first meeting of any in-service program is primarily an introductory period in which to meet teachers, administrators and students; take a broad look at the problem to be studied in the future; and to develop

Dr. Breen discusses program activities.

principles to guide the thinking and behavior of the participants for the remainder of the project. In discussing the reasons for, conducting of, and participant roles in an in-service program the group decided to follow the principles which have served as guidelines in other similar types of programs.[1]

I. Guidelines relating to content:
In-service programs are, by definition, different from pre-service programs.
   (a) In-service is more directly task-oriented and its basic function is to increase the effectiveness of teachers in the decision-making process. Since classroom decisions are effective only when based on adequate knowledge, new information and awareness of the growing body of knowledge in a field is inherently a part of in-service.
   (b) Inservice must not be beset by problems of complexity. Teaching of reading is a complex, inter-disciplinary problem, lending itself to well to over-complexity; thus, orientation with a well-defined problem is essential to good programming.

II. Guidelines relating to organization:
In-service programs involving large groups of people and lecture-approaches are relatively ineffective in producing change in the classroom.
Imaginative planning of intensive, teacher-involved programs is essential to the changing of behavior.
   (a) Intensive programs involve small numbers of teachers working together to examine well-defined program operations.
   (b) Teacher-involvement means that teachers must have some part in defining the problem and must assume some responsibility for diffusion of new understandings.

III. Guidelines relating to participant roles:
The various roles of consultant, supervisor, principal, and teacher need definition in in-service.
   (a) The consultant is essentially an innovator, who in on-going in-service relates the innovations to the total school setting.
   (b) The supervisory role is, perhaps, best defined in terms of the liaison activities necessary to make effective translation of a total-system plan into a local unit setting.
   (c) The principal in the in-service program finds his major responsibilities assuming a secondary place.
   (d) Certain teachers must assume roles of leadership; theirs is the pivotal position upon which the success of the program lies.

IV. Guidelines relating to attitudes that produce change:
Successful in-service programs in reading depend on each teacher's awareness of the problem studied, her perception of the principal's attitude toward the program, and her openness to the experience. In-service programs must be planned to "reward" or reinforce these attitudes.

It was decided further that because of the short time to be spent at each grade level the teachers might profitably instruct each other through sharing the ideas, concepts and materials developed during each in-service day. For example, the primary teachers might share with the middle and upper grade teachers those ideas left with them. They would, in turn, receive similar help from the middle and upper grade teachers following the in-service day with that group. This system of mutual sharing, it was felt, would not only increase the amount of in-service education which each teacher received but made it possible for each teacher to practice the concepts learned through demonstrations with others.

An examination and discussion of the topic of reading comprehension yielded the realization that the term, "comprehension," was an all-encompassing concept which meant a great deal more than simply "understanding what one reads." The views of Nila B. Smith, Emerald DeChant, Guy Bond and Miles Tinker were presented in order to help the group begin to feel the

[1] *Report of Principles' In-Service Program in Reading, Ysleta Schools, 1967.* Reading Research Center, New Mexico State University, Las Cruces, New Mexico (1967).

actual breadth of this word. The following list was left with each teacher with the charge that she begin to diagnose her individual pupils' ability to comprehend in terms of specific strengths and weaknesses exhibited by each child. This could then serve as a reference point from which to conduct our experiences in the future.

Comprehension Skills

Comprehension involves a complex of abilities. The good comprehender possesses:

1. The ability to associate experiences and meaning with the graphic symbol.
2. The ability to react to the sensory images (visual, auditory, kinesthetic, taste, smell) suggested by the words.
3. The ability to interpret verbal connotations and denotations.
4. The ability to understand words in context and to select the meaning that fits the context.
5. The ability to give meaning to units of increasing size; the phrase, clause, sentence, paragraph, and whole selection.
6. The ability to detect and understand the main ideas.
7. The ability to recognize significant details.
8. The ability to interpret the organization of a selection.
9. The ability to answer questions that are answered in a printed passage.
10. The ability to follow directions.
11. The ability to perceive relationships: part-whole; cause-effect; general-specific; place, sequence, size, and time.
12. The ability to interpret figurative expressions.
13. The ability to make inferences and to draw conclusions, to supply implied details, and to evaluate what is read.
14. The ability to identify and evaluate character traits, reactions, and motives.
15. The ability to anticipate outcomes.
16. The ability to recognize and understand the writer's purpose.
17. The ability to recognize literary and semantic devices and to identify the tone, mood, and intent or purpose of the writer.
18. The ability to determine whether the text affirms, denies, or fails to express an opinion about a supposed fact or condition.
19. The ability to identify the antecedents of such words as who, some, or they.
20. The ability to retain ideas.
21. The ability to apply ideas and to integrate them with one's past experience.

December 14

The meeting with the primary teachers was spent in showing the teachers how language influences the understanding of written materials, how to capitalize upon the children's expression of their experiences to aid reading comprehension and how to furnish the children with some unique and creative language experience opportunities. Appendix A contains examples of some of the materials left with the teachers for adaptation and use with their children. The teachers also had the opportunity to examine and plan lessons from the following commercial materials:

Experiential Development Program — Series A, B, C
Muriel Stanek and Frances Munson
Benefic Press, Chicago, 1966.

Language Experiences in Reading
Roach Van Allen and Claryce Van Allen
Encyclopedia Britannica Press, Chicago, 1966.

Kit A Language — Building Pre-Reading Skills
Theodore Clymer, Bernice Christenson and David Russell
Ginn and Company, Boston, 1965.

Can You Imagine?
R. E. Myers and E. Paul Torrance
Ginn and Company, Boston, 1965.

January 11

The middle and upper grade teachers were primarily concerned with seeing reading as a thinking process. The language experience lessons were directed toward the organization of main ideas and putting these ideas into paragraphs. All middle grade teachers received materials giving them ideas and ways to teach the children to read paragraphs, read for organization and main ideas, and to read for inferences. A great deal of discussion also revolved around the concept of vocabulary and its role in comprehension. As an aid in viewing reading as a thinking process all middle grade teachers were taught the SQ3R approach to study and were encouraged to help their classes incorporate this technique in one subject area. It was through the vehicle of these approaches that the teachers hoped to let the children see reading as a meaningful tool for use in all of their reading experiences. Appendix B contains samples of worksheets left with the teachers of the middle grades for use with their students. The following commercial materials were examined for ideas and as guides for further lessons using reading as a thinking process:

Invitations to Thinking and Doing
R. E. Myers and E. Paul Torrance
Ginn and Company, Boston, 1965.

Invitations to Speaking and Writing Creatively
R. E. Myers and E. Paul Torrance
Ginn and Company, Boston, 1965.

Gates Peardon Reading Exercises
Arthur Gates and Celeste Peardon
Bureau of Publications, Teachers College, Columbia University, New York, 1963.

Reading-Thinking Skills
The Continental Press, Inc.
Elizabethtown, Pa., 1963.

February 15 and March 14

Activities conducted with the junior and senior high school teachers were similar enough that discussion of them may easily be handled under a single heading. Two aspects of improving reading comprehension were discussed with each of these two groups. The first was that of teaching reading as a thinking process and an examination of the specific reading comprehension skills needed for success in each subject matter field. It was felt by these secondary teachers that the typical high school teacher would be more likely to become interested in and teach reading skills if they could see specific ways in which they were used as tools in the particular subject fields. All knew that the ability to read and comprehend was necessary for academic success in their courses but few had identified the reading skills needed for success or methods for teaching them. *The Kansas Studies in Education* were used to introduce reading skills and methods of teaching them for the subject areas of language arts, social studies, mathematics and science. Using this document as a guide the teachers then developed a similar list of reading skills and teaching methods for the fields of home economics and music.

The second approach explored as a technique for improving comprehension at the secondary level was the role of classroom questions as an instrument for helping students think and respond at varying levels of cognitive behavior. Interest in this problem stemmed from a realization that although some teachers ask questions of high quality, far too many overemphasize those which require students only to recall or memorize facts and details. Hence, many students seldom, if ever, read to discover relationships, solve problems, or evaluate ideas.

The principal objective in pursuing the concept of classroom questions was that of broadening the awareness of the teachers to the possible levels of student thinking and response above and beyond that of memory. The vehicle of instruction used in this endeavor was the book *Classroom Questions, What Kinds* by Norris M. Sanders. The levels of questioning behavior explored in this book, and subsequently in this project, are:

1. Memory: The student recalls or recognizes information.
2. Translation: The student changes information into a different symbolic form or language.
3. Interpretation: The student discovers relationships among facts, generalizations, definitions, values and skills.
4. Application: The student solves a lifelike problem that requires the identification of the issue and the selection and use of appropriate generalizations and skills.
5. Analysis: The student solves a problem in the light of conscious knowledge of the parts and forms of thinking.
6. Synthesis: The student solves a problem that requires original, creative thinking.
7. Evaluation: The student makes a judgment of good or bad, right or wrong, according to standards he designates.

PROGRAM EVALUATION

This program was characterized by continuous evaluation planned and executed by both the teachers and the reading center personnel. Subjective evaluation in the form of student, teacher and administrative comment or suggestion was instrumental for determining the apparent value of the project for the teachers. Subjective critiques also made it possible to keep the focus of the program on problems facing the teachers in their day to day performance.

One day of the total project time was allowed for the collection of objective data to be used in evaluating the program's success in meeting the specific behavorial objective stated earlier in this report. It was decided that this might be accomplished by tape recording samples of selected teachers' classroom sessions prior to and following the presentation of the material dealing with classroom questions. This would then be analyzed to determine whether or not the teachers seemed to display changes in their questioning behavior. Tape recordings were taken from a twenty-minute class session in a first, third, fifth, seventh and ninth grade reading class and from a twelfth grade English class. These six classes were recorded twice, once in October and again in April. These recordings were listened to by a panel of three judges who had received training in Sanders' levels of

questioning. Instructions were given to the judges to count the number of questions each teacher used during this twenty-minute session and to reach a consensus among themselves in categorizing the questions according to the Sanders classification. Although lacking in statistical sophistication the results indicated the following results in evaluating this project's behavioral objectives.

PERCENT OF QUESTIONS
AT EACH LEVEL OF CLASSIFICATION

Pre In-Service (October)		Post In-Service (April)	
Memory	70	Memory	50
Translation	5	Translation	6
Interpretation	5	Interpretation	20
Application	2	Application	5
Analysis	2	Analysis	3
Synthesis	1	Synthesis	1
Evaluation	15	Evaluation	15

OBJECTIVE: All teachers will display a greater emphasis in eliciting higher level responses from children through the use of higher level questioning behavior.

Although taken from a limited sample it would seem that this objective was reached. It can be seen that there were 20 percent fewer memory questions asked during the second taping session and 20 percent more questions elicited which required higher levels of thinking behavior.

OBJECTIVE: All teachers will display a lessened tendency to accept student responses which are incongruent to the teacher's question.

No data was collected to measure this objective.

OBJECTIVE: All teachers will ask a greater number of open-ended, multiple answer questions rather than single answer "one-shot" questions.

The data seems to show that the project was successful in meeting this objective. The two levels which showed the greatest measure of improvement or change were those of interpretation and application. These categories require answers and levels of thinking which naturally rule out the possibility of single answer questions or of single word answers.

OBJECTIVE: All teachers will demonstrate an increased ability to relate their questions to one another and challenge deeper thinking in their students.

No data was collected to measure this objective.

OBJECTIVE: All teachers will be able to identify and utilize Gallagher's model for asking questions and eliciting student responses at different cognitive levels.

Because it was decided to use Sanders' book and levels of thinking it was impossible to measure a knowledge of Gallaghers concepts. All teachers, however, were aware of Sanders' levels of questions and could list and discuss them briefly on a paper-pencil test or in conversation.